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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,994

01/23/2006

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11/27/2007

EXAMINER

TRAN, HOANG Q

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/565,994

Applicant(s)

LEE, GEUM-SUK

Examiner

Hoang Tran

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-6 and 8 is/are rejected.
- 7) ☐ Claim(s) 7 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the US Patent to Semura (5,696,860) in view of the Japanese Patent Application Publication to Kondo (2002-162211).

In terms of Claim 1 and 8, Semura teaches a fixer for fiber, the fixer including a pair of fixing pieces (Fig 2 [26,33]), wherein each of the fixing pieces has a groove at a bottom surface of the fixing piece, and a receiving portion protruded from one side of the fixing piece, which communicates with the sensor holding groove (Fig 2 [16, 18]); a enclosing the fiber is disposed between the pair of fixing pieces, such that both ends are secured to each of the tube receiving portions of the fixing pieces by a fastening member (Fig 2 and Col 3 [1-67]); and the fiber is inserted into both ends of the fiber are firmly secured to the holding groove of fixing piece by an adhesive (Fig 2). Semura does not teach tube shape enclosure or a screw like fixing member wherein the tube is detachably secure nor does it teach each fixing piece with the tube receiving portion is an integrate structure in assembly for measuring the strain of the object. Kondo does teach a tube shape enclosing for FBG sensor gratings wherein the tube receive portion

(16) is associated with fastening member (13a, 13C) wherein the tube is not directly fixed to a surface of the object to be measured. Figure 16 shows the tube 10 is not fixed to the object to be measured, which is shown as element (10). Kondo further teaches the fixing pieces when fully assemble are integrated because they are attached together by the screw (13c) wherein the pair of fixing pieces is to be fixed on the surface of the object while the tube (10) is not fixed to the surface of the object (Drawing 6). **A motivation** to use a tube shape enclosing would offer protective advantages over an open fixing member and the screw fixing member to ensure strong mechanical fixing between the tube and fixing member. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the substrate of Semura and enclose it with a tube protective enclosing of Kondo.

As for Claim 2, Semura teaches the device of Claim 1, further comprising a cover for closing the holding groove (Fig 2).

As for Claim 4, Semura teaches the device of Claim 1, wherein the holding groove is formed with at least one anti slip groove at an inner side thereof so that when the adhesive filled in the sensor holding groove is harden, it prevents a clearance form being produce in the holding groove due to coefficient of linear expansion between the fixing piece and the adhesive (Fig 6).

**Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the US Patent to Semura in view of the Japanese Patent Application Publication to Kondo (2002-162211).**

Regarding Claim 3 and 5, Semura teaches the device of Claim 1. Semura does not teach the device of Claim 1; wherein the fixing means includes a tube which is fasten through a threaded engagement system and a fixing plate being detachable through a fastening member component. Kondo does the threaded engagement system (Fig 3 and 4) and a fixing plate, which is fixed through a fastening member (Paragraph 23 and 24) in order to properly secure the tube and the fixing components. The side-fixing feature is shown with the fixing member along with element [13c], which acts as a screw. **A motivation** for such an application would be to increase the mechanical coupling the components through fastening means of a screw. Therefore it would have been obvious at the time of the invention to apply the mechanical fastening systems of Kondo to the device of Semura in order to increase the mechanical couple strength of the of the coupler.

**Claims 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over of the US Patent to Semura in view of Kondo further in view of the US Patent to Seike (5,367,591).**

Regarding Claim 6, Semura teaches the device of Claim 1. Semura does not teach the device of Claim 1, wherein the tube inserted into the tube-receiving portion is provided at both ends thereof with a tap to easily prevent a rotation of the tube and maintain a horizontal state. Seike does a tap like geometric structure in order to increase mechanical coupling and protect the optical fiber from environmental damage. **A motivation** for such an application would be to protect the fiber from environmental damage and increase the mechanical couple of the fibers with the tube connectors.

Therefore it would have been obvious at the time of the invention to apply teachings of Seike to the device of Semura in order to increase the mechanical coupling strength between the fiber and the tube passageway.

### ***Response to Arguments***

Applicant's arguments filed 09/13/2007 have been fully considered but they are not persuasive. The applicant has made the following argument below. Upon further review and consideration the examiner has found the new amend limitations were still taught by Kondo. The newly cited rejection above now further includes the grounds of rejection to the newly amended limitations.

- Claim 1:
- a) Prior does not teach the fastening member engaged to the upper portion of the tube is removed after the fixing piece 3 is secure to the object to be measured.
  - b) Applicant argues prior art is silent to "fixing pieces, such that both ends of the tube are detachably secured to each of the tube receiving portions of the fixing pieces by a fastening member.
  - c) The pieces of Kondo are not detachable during operation.

Claim 3: a) Kondo does not teach a threaded hole is formed on an upper portion of the tuber receiving portion, and fastening member is threaded engaged with the threaded holed for selectively compressing the fastening tube.

Claim 5: a) Kondo does not teach the screw part is fixed at both ends of the tube but not from the side.

The Examiner Response:

Claim 1: a) Claim 1 does not claim wherein the upper port of the tube is removed after the fixing piece is secure to the object to be measured. Therefore the examiner has not considered this limitation.

b) Prior art to Kondo (Drawing 6) teaches a fastener screw (13c) fastens (13b and 13a) together to the tuber. Drawing 4 further shows these fasteners structure (13) are present on both side of the tube.

c) The examiner has not found any limitations pertaining to detachability of the tube and fixing member during operation therefore this limitation was not consider and argument is moot because the limitation was not claimed in Claim 1.

Claim 3: a) Kondo does teach a threaded hole (wherein screw 13c fits into) is formed on an upper portion of the tuber receiving portion (13), and fastening member (13c) is threaded engaged with the threaded holed for selectively compressing the fastening tube (drawing 6).

The prior art to Kondo meets the limitation as Claimed in Claim 3.

Claim 5: a) Claim 5 as filed has no mention the limitation "the screw part is fixed at both ends of the tube but not from side". Therefore the examiner has not given weight to this argument.

#### ***Allowable Subject Matter***

Claims 7 and 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regards to claim 7 prior art is silent the device of Claim 1 wherein the each fixing piece with the tuber receiving portion is a single structural body.

In regards to claim 9 prior art is silent the device of Claim 1 wherein the fastening member fixes the tube but not change a tension condition of the fiber brag grating sensor.



***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang Tran whose telephone number is 571-272-5049. The examiner can normally be reached on 9:00AM - 5:00 PM.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit: 2874

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Hoang Tran  
AU 2874  
November 26, 2007

/Kevin S. Wood/  
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Primary Examiner  
Art Unit 2874